

CLAIMS

I CLAIM:

1. A diesel purifier unit comprising a purification chamber encapsulated by an external body of the unit wherein, the purification
5 chamber has a barrier with conical and cylindrical parts surrounded by a filter, such that fuel flows from the unit inlet through a pipe to the conical part, further wherein the upper part of the unit has a relief valve, the lower part has a heating element, and a water sensor connectable to sound and light indicators at a cabin dash board, and at the bottom there is a drain valve and
10 filter, which is secured at the outlet of the unit.
2. A diesel purifier unit according to claim 1, wherein the external body and the fuel inlet pipe and cylindrical and conical parts are made by forming black steel sheet, and upper and lower covers are formed by
15 moulding, and place for relief valve, heating element, water cock and drain valve are formed by hydraulic devices .
3. A diesel purifier unit according to claim 1, wherein connected parts are subject to grinding, and then the unit is cleaned by ordinary solvents;
20 further wherein tightness against leaking is tested under pressurized air of 7 bars, and then the unit is coated by an appropriate paint .
4. A diesel purifier unit according to claim 3, wherein unit intended for marine use is coated with anti-corrosion .
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5. A diesel purifier unit according to claim 1, wherein the relief valve, the heating element, drain valve, and water sensor are secured by a clamp, and to ensure tightness and a gasket is used for installation of any
30 these valves .

6. A diesel purifier unit according to claim 5, wherein relief valve, heating element, drain valve, and water cock are secured by riveting or any appropriate method .

5 7. A diesel purifier unit according to claim 1, wherein wire filters are made of aluminium wires .

8. A process for purifying diesel fuel using purifier according to claim 1 characterized in that fuel flows into the purifier through the inlet then
10 down to the conical part where it will be under the effect of the heating element, which warms up diesel fuel found at this site, generating load currents that contribute towards separation and setting of heavy contaminants at the bottom, in the direction of the drain valve, and warmed fuel up flow in the direction of the wire filters, which separates fine contaminants, and pure
15 fuel continues flowing towards the outlet, where it is finally purified by filter, which is installed at the outlet and flows out pure and free from water, heavy and light contaminants, then it goes towards the primary convention filter .

9. A process according to claim 8, wherein diesel fuel in the conical
20 part is heated to temperature in the range from 25°C up to 55°C.

10. A process according to claim 8, characterized in that water and heavy contaminants build-up at the lower part of the unit in the direction of drain valve .

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11. A process according to claim 8, characterized in that warning light and sound alert is triggered out once contaminants go to a pre-determined level, declaring time for drain of contaminants .

30 12. A process according to claim 8, characterized in that contaminants are drained by opening the upper relief valve and the lower

drain valve, to start drain of water and heavy contaminants, and once drain is completed, relief and drain pipes are closed .